Volk, Everett

From: Kusnierz, Lisa
Sent: Tuesday, February 04, 2014 2:21 PM
To: 'Yashan, Dean'
Cc: 'Fortman, Kristy'
Subject: RE: Riparian Health Assessment in TMDLs

For my projects there has not been a set width used to define the categories. We have field-verified the health calls but it is a fairly coarse assessment based on aerial imagery. The health call is a combination of width and density – typically areas of reference vegetation for each land use category within a watershed or a particular stream helps us calibrate to the potential for that system (i.e., what a "good" buffer is). I have used widths to help relate the loading reductions and guide implementation more recently. Here's some language from the Kootenai-Fisher:

Thirty five feet is the minimum buffer width recommended by NRCS (Natural Resource Conservation Service, 2011a; 2011b) and 50 feet is the minimum width of the streamside management zone in Montana (DNRC 2006). Although buffer widths of 30 to 50 feet help reduce upland sediment loading to surface waters, the ability of riparian buffers to effectively filter sediment increases with increasing buffer width. For instance, a 100 foot wide, well-vegetated riparian buffer is a common recommended buffer width (Mayer, et al., 2005; Cappiella, et al.,2006) and has been found to filter 75-90% of incoming sediment from reaching the stream channel (Wegner, 1999; Knutson and Naef, 1997).

Although sediment removal efficiency is affected by factors such as ground slope, buffer health, and buffer composition, the literature values for a 100 foot buffer were used as the basis for applying a 75% sediment reduction efficiency (SRE) to buffers classified as 'good' and then scaling down the SRE based on the health classification (i.e., the SRE declines as buffer health/width declines) (**Figure 2-7**). The actual sediment removal efficiency is likely greater than shown in **Figure 2-7**, but conservative values from the literature were used as part of an implicit margin of safety. Note: Even though the health classifications assigned to streams in the Kootenai-Fisher Project Area roughly correspond to different widths, and vegetative condition, density, and potential were considered during field verification of the classifications, the loading reductions based on riparian health are predominantly intended to highlight the importance of maintaining healthy riparian zones in reducing loading from upland sediment erosion. The values were not calibrated and do not necessarily reflect actual loading reductions associated with the riparian zone.

From: Yashan, Dean [mailto:DYashan@mt.gov]
Sent: Tuesday, February 04, 2014 1:16 PM
To: Fortman, Kristy; Kusnierz, Lisa
Subject: FW: Riparian Health Assessment in TMDLs

Need some help with this response. I seem to recall that we did not focus all that much on the riparian width until recently; or maybe that was somehow integrated into our numbers in the Gallatin or defined to some extent in the implementation section.

From: Guy Alsentzer [mailto:guy@uppermissouriwaterkeeper.org]
Sent: Tuesday, February 04, 2014 12:58 PM
To: Yashan, Dean
Subject: Riparian Health Assessment in TMDLs

Hi Dean,

Hoping you can help answer a question regarding riparian buffer values used in TMDL calculations. As you well know many TMDLs in MT possess a "Riparian Health Assessment" that typically grades vegetated riparian buffers on their ability to trap sediment; classifications are made as "good," "fair" and "poor" with respective reduction efficiencies.

My question is what is the width associated with each category? Not to be confused with the length of a buffer along a riparian zone. Put another way, what is the base width of a "good" "fair" and "poor" buffer in a typical riparian health assessment? I've attached a screenshot of a chart from Attachment C in the Lower Gallatin TMDL to help illustrate my query; the parameters in that chart only appear to describe the length, in miles, of surveyed buffers. Attachment C doesn't include further description of respective widths for classifications.

Thank you in advance for your help!
GA

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Table 2-5. Riparian Health Statistics for the Lower Gallatin River Watershed.

Stream	Parameter	Riparian Condition		
		Poor	Fair	Good
Bear Creek	Length (mi)	0.00	14.76	5.51
	Percent	0%	73%	27%
Bozeman Creek	Length (mi)	2.28	18.56	10.74
	Percent	7%	59%	34%
Camp Creek	Length (mi)	14.97	35.43	0.28
	Percent	30%	70%	1%
Dry Creek	Length (mi)	2.06	29.94	0.46
	Percent	6%	92%	1%
Godfrey Creek	Length (mi)	12.10	2.14	0.00
	Percent	85%	15%	0%
Jackson Creek	Length (mi)	0.00	14.80	0.77
	Percent	0%	95%	5%
Reese Creek	Length (mi)	2.28	12.58	0.00
	Percent	15%	85%	0%
Rocky Creek	Length (mi)	1.98	12.00	1.10
	Percent	13%	80%	7%
Smith Creek	Length (mi)	0.62	11.98	0.00
	Percent	5%	95%	0%
Stone Creek	Length (mi)	0.00	10.83	0.31
	Percent	0%	97%	3%
Thompson Creek	Length (mi)	3.76	10.62	0.00
	Percent	26%	74%	0%